

III. Remarks

Claims 1-10 have been canceled in favor of new claims 15-42, and reconsideration of this application in light of these amendments and the following remarks is respectfully requested.

New independent claim 15 has been drafted to distinguish over the patents applied in the above office action and is allowable for the following reasons.

Although some of the previous claims were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Pat. No. 5,525,466 to Slovacek et al. ("Slovacek") and/or U.S. Pat. No. 4,844,869 to Glass ("Glass") as taught by U.S. Pat No. 4,447,546 to Hirschfeld ("Hirschfeld"), these patents are not applicable to new independent claim 15 for the following reasons.

New claim 15 recites a cylindrical structure having a longitudinal axis; a plurality of detection substances each comprising a predetermined chemical structure; and a base member to which each detection substance is fixed, the base member having an unrolled configuration in which the detection substances are arranged in a predetermined order along the longitudinal length of the base member; and each pair of adjacent detection substances are spaced at a predetermined longitudinal spacing along the longitudinal length of the base member; and a rolled configuration in which the base member is rolled around the cylindrical structure to define a plurality of circumferentially-extending rolls; each pair of adjacent rolls in the plurality of circumferentially-extending rolls are spaced at a predetermined axial spacing along the longitudinal axis of the cylindrical structure; each detection substance is exposed outwards and fixed to the base member at a predetermined fixed position relative to the outer surface of the cylindrical structure; and each predetermined fixed position is defined by the predetermined order along the longitudinal length of the base member, the predetermined longitudinal spacings along the longitudinal length of the base member, and the predetermined axial spacings along the longitudinal axis of the cylindrical structure.

The PTO provides in MPEP §2131 that:

"[t]o anticipate a claim, the reference must teach every element of the claim."

Therefore, to support these rejections with respect to new claim 15, the Slovacek patent, or the Glass patent as taught by the Hirschfeld patent, must contain all of the above-claimed elements of the claim. However, none of these patents discloses a cylindrical structure having a longitudinal axis; a plurality of detection substances each comprising a predetermined chemical structure; and a base member to which each detection substance is fixed, the base member having an unrolled configuration in which the detection substances are arranged in a predetermined order along the longitudinal length of the base member; and each pair of adjacent detection substances are spaced at a predetermined longitudinal spacing along the longitudinal length of the base member; and a rolled configuration in which the base member is rolled around the cylindrical structure to define a plurality of circumferentially-extending rolls; each pair of adjacent rolls in the plurality of circumferentially-extending rolls are spaced at a predetermined axial spacing along the longitudinal axis of the cylindrical structure; each detection substance is exposed outwards and fixed to the base member at a predetermined fixed position relative to the outer surface of the cylindrical structure; and each predetermined fixed position is defined by the predetermined order along the longitudinal length of the base member, the predetermined longitudinal spacings along the longitudinal length of the base member, and the predetermined axial spacings along the longitudinal axis of the cylindrical structure.

As a result, the previous rejections based on 35 U.S.C. §102(b) cannot be supported by the Slovacek patent, or by the Glass patent as taught by the Hirschfeld patent, as applied to new claim 15.

Some of the previous claims were rejected under 35 U.S.C. §103(a) as being unpatentable over Glass in view of U.S. Pat. No. 6,251,688 to Erb et al. ("Erb"), or Glass in view of Erb and further in view of Slovacek and U.S. Pat. No. 4,031,399 to Klein et al. ("Klein"). However, these rejections are not applicable to new claim 15.

As the PTO recognizes in MPEP §2142:

The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness.

The examiner clearly cannot establish a *prima facie* case of obviousness in connection with claim 15 for the following reasons.

35 U.S.C. §103(a) provides that:

[a] patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains ... (emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, Glass, Erb, Slovacek and Klein, alone, or in any combination, do not teach a cylindrical structure having a longitudinal axis; a plurality of detection substances each comprising a predetermined chemical structure; and a base member to which each detection substance is fixed, the base member having an unrolled configuration in which the detection substances are arranged in a predetermined order along the longitudinal length of the base member; and each pair of adjacent detection substances are spaced at a predetermined longitudinal spacing along the longitudinal length of the base member; and a rolled configuration in which the base member is rolled around the cylindrical structure to define a plurality of circumferentially-extending rolls; each pair of adjacent rolls in the plurality of circumferentially-extending rolls are spaced at a predetermined axial spacing along the longitudinal axis of the cylindrical structure; each detection substance is exposed outwards and fixed to the base member at a predetermined fixed position relative to the outer surface of the cylindrical structure; and each predetermined fixed position is defined by the predetermined order along the longitudinal length of the base member, the predetermined longitudinal spacings along the longitudinal length of the base member, and the predetermined axial spacings along the longitudinal axis of the cylindrical structure.

Therefore, it is impossible to render the subject matter of claim 15 as a whole obvious based on any combination of the patents, and the above explicit terms of the statute cannot be met. As a result, the examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to claim 15, and a rejection under 35 U.S.C. §103(a) is not applicable.

There is still another compelling, and mutually exclusive, reason why the Glass, Erb, Slovacek and Klein patents cannot be combined in any combination and applied to reject claim 15 under 35 U.S.C. §103(a).

The PTO also provides in MPEP §2142:

[T]he examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. ...[I]mpermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

Glass and Erb, or Glass, Erb and Slovacek, or Glass, Erb, Slovacek and Klein, or any other combination thereof, do not teach, or even suggest, the desirability of the combination since none of the patents teaches or suggests providing a cylindrical structure having a longitudinal axis; a plurality of detection substances each comprising a predetermined chemical structure; and a base member to which each detection substance is fixed, the base member having an unrolled configuration in which the detection substances are arranged in a predetermined order along the longitudinal length of the base member; and each pair of adjacent detection substances are spaced at a predetermined longitudinal spacing along the longitudinal length of the base member; and a rolled configuration in which the base member is rolled around the cylindrical structure to define a plurality of circumferentially-extending rolls; each pair of adjacent rolls in the plurality of circumferentially-extending rolls are spaced at a predetermined axial spacing along the longitudinal axis of the cylindrical structure; each detection substance is exposed outwards and fixed to the base member at a predetermined fixed position relative to the outer surface of the cylindrical structure; and each predetermined fixed position is defined by the predetermined order along the longitudinal length of the base member, the predetermined longitudinal spacings along the longitudinal length of the base member, and the predetermined axial spacings along the longitudinal axis of the cylindrical structure.

Thus, none of these patents provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103(a) rejection of claim 15.

In this context, the MPEP further provides at §2143.01:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. (emphasis in original)

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In the present case it is clear that the examiner's combination arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in any of the references for the combination as applied to claim 15. Therefore, for this mutually exclusive reason, the examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to claim 15, and the rejection under 35 U.S.C. §103(a) is not applicable.

New independent claim 25 has been drafted to distinguish over the patents applied in the above office action and is allowable for the following reasons.

Although some of the previous claims were rejected under 35 U.S.C. §102(b) as being anticipated by Slovacek and/or Glass as taught by Hirschfeld, these patents are not applicable to new independent claim 25 for the following reasons.

New claim 25 recites a tubular member; a base member disposed in the tubular member; a plurality of detection substances fixed to the base member wherein each detection substance comprises a predetermined chemical structure and is fixed to the base member at a predetermined fixed position; means connected to the tubular member for drawing liquid into the tubular member and discharging the liquid from the tubular member wherein at least one target substance is suspended in the liquid and reacts with the detection substances at the corresponding predetermined fixed positions; and means positioned outside of the tubular member for identifying the target substance after the target substance has reacted with the detection substances, the identifying means comprising means for irradiating excitation light through the wall of

the tubular member, and means for receiving emissions propagating through the wall of the tubular member and from the predetermined fixed positions in response to the excitation light.

The PTO provides in MPEP §2131 that:

"[t]o anticipate a claim, the reference must teach every element of the claim."

Therefore, to support these rejections with respect to new claim 25, the Slovacek patent, or the Glass patent as taught by the Hirschfeld patent, must contain all of the above-claimed elements of the claim. However, none of these patents discloses a tubular member; a base member disposed in the tubular member; a plurality of detection substances fixed to the base member wherein each detection substance comprises a predetermined chemical structure and is fixed to the base member at a predetermined fixed position; means connected to the tubular member for drawing liquid into the tubular member and discharging the liquid from the tubular member wherein at least one target substance is suspended in the liquid and reacts with the detection substances at the corresponding predetermined fixed positions; and means positioned outside of the tubular member for identifying the target substance after the target substance has reacted with the detection substances, the identifying means comprising means for irradiating excitation light through the wall of the tubular member, and means for receiving emissions propagating through the wall of the tubular member and from the predetermined fixed positions in response to the excitation light.

As a result, the previous rejections based on 35 U.S.C. §102(b) cannot be supported by the Slovacek patent, or by the Glass patent as taught by the Hirschfeld patent, as applied to new claim 25.

Some of the previous claims were rejected under 35 U.S.C. §103(a) as being unpatentable over Glass in view of Erb, or Glass in view of Erb and further in view of Slovacek and Klein. However, these rejections are not applicable to new claim 25.

As the PTO recognizes in MPEP §2142:

The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. If the examiner does not produce a prima facie case, the applicant is under no obligation to submit evidence of nonobviousness.

The examiner clearly cannot establish a *prima facie* case of obviousness in connection with claim 25 for the following reasons.

35 U.S.C. §103(a) provides that:

[a] patent may not be obtained ... if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains ... (emphasis added)

Thus, when evaluating a claim for determining obviousness, all limitations of the claim must be evaluated. However, Glass, Erb, Slovacek and Klein, alone, or in any combination, do not teach a tubular member; a base member disposed in the tubular member; a plurality of detection substances fixed to the base member wherein each detection substance comprises a predetermined chemical structure and is fixed to the base member at a predetermined fixed position; means connected to the tubular member for drawing liquid into the tubular member and discharging the liquid from the tubular member wherein at least one target substance is suspended in the liquid and reacts with the detection substances at the corresponding predetermined fixed positions; and means positioned outside of the tubular member for identifying the target substance after the target substance has reacted with the detection substances, the identifying means comprising means for irradiating excitation light through the wall of the tubular member, and means for receiving emissions propagating through the wall of the tubular member and from the predetermined fixed positions in response to the excitation light.

Therefore, it is impossible to render the subject matter of claim 25 as a whole obvious based on any combination of the patents, and the above explicit terms of the statute cannot be met. As a result, the examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to claim 25, and a rejection under 35 U.S.C. §103(a) is not applicable.

There is still another compelling, and mutually exclusive, reason why the Glass, Erb, Slovacek and Klein patents cannot be combined in any combination and applied to reject claim 25 under 35 U.S.C. §103(a).

The PTO also provides in MPEP §2142:

[T]he examiner must step backward in time and into the shoes worn by the hypothetical "person of ordinary skill in the art" when the invention was unknown and just before it was made. In view of all factual information, the examiner must then make a determination whether the claimed invention "as a whole" would have been obvious at that time to that person. ...[I]mpermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art.

Glass and Erb, or Glass, Erb and Slovacek, or Glass, Erb, Slovacek and Klein, or any other combination thereof, do not teach, or even suggest, the desirability of the combination since none of the patents teaches or suggests providing a tubular member; a base member disposed in the tubular member; a plurality of detection substances fixed to the base member wherein each detection substance comprises a predetermined chemical structure and is fixed to the base member at a predetermined fixed position; means connected to the tubular member for drawing liquid into the tubular member and discharging the liquid from the tubular member wherein at least one target substance is suspended in the liquid and reacts with the detection substances at the corresponding predetermined fixed positions; and means positioned outside of the tubular member for identifying the target substance after the target substance has reacted with the detection substances, the identifying means comprising means for irradiating excitation light through the wall of the tubular member, and means for receiving emissions propagating through the wall of the tubular member and from the predetermined fixed positions in response to the excitation light.

Thus, none of these patents provides any incentive or motivation supporting the desirability of the combination. Therefore, there is simply no basis in the art for combining the references to support a 35 U.S.C. §103(a) rejection of claim 25.

In this context, the MPEP further provides at §2143.01:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. (emphasis in original)

In the above context, the courts have repeatedly held that obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. In the

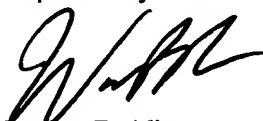
present case it is clear that the examiner's combination arises solely from hindsight based on the invention without any showing, suggestion, incentive or motivation in any of the references for the combination as applied to claim 25. Therefore, for this mutually exclusive reason, the examiner's burden of factually supporting a *prima facie* case of obviousness clearly cannot be met with respect to claim 25, and the rejection under 35 U.S.C. §103(a) is not applicable.

Dependent claims 16-24 and 26-42 depend from, and further limit, independent claims 15 and 25, respectively, in a patentable sense and therefore are allowable as well.

In view of all of the above, the allowance of claims 15-42 is respectfully requested.

The examiner is invited to call the undersigned at the below-listed telephone number if a telephone conference would expedite or aid the prosecution and examination of this application.

Respectfully submitted,



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Dated: _____

9/23/04

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